



aerospace  
climate control  
electromechanical  
filtration  
**fluid & gas handling**  
hydraulics  
pneumatics  
process control  
sealing & shielding



# Parker Solutions for Table Top Sterilizers

Solenoid Valves and Accessories



ENGINEERING YOUR SUCCESS.

# Parker FCDE

## Who we are?

*The Fluid Control Division in Europe (FCDE) is a division of Parker Hannifin, the global leader in motion and control technologies.*

*FCDE core competences are the development and manufacturing of an extremely diverse range of fluid control products, including solenoid valves and pressure regulators.*

## Where we are?

*Our European headquarters are located in Geneva, this is also where our R&D, Marketing, Application Support and Product Management functions are located.*

*FCDE Products are mainly manufactured at locations in Carouge (Geneva - Switzerland) and Gessate (Milan - Italy).*

*The Parker Sales Companies and comprehensive distribution network support you, wherever you are.*

## History

Parker FCDE has been a leading player in the manufacturing and development of solenoid valve technologies for over 60 years, with continuous research and development bringing innovative solutions to the marketplace, for example leading the way in the utilisation of synthetic ruby for critical water applications or the unsurpassed reliability and precision of our pressure regulators. The expertise accumulated and developed through the years is evident in the superior quality of FCDE solutions.

## Markets

Our products and solutions are typically designed for markets including Industrial Equipment, Industrial Automation, Mobile, Transportation, Life Sciences, Beverage dispensing and for Fluid and Process Control.

## Benefits

The modular concept of our products, having separate solenoid valves and electrical parts, provides the customer with increased flexibility by allowing numerous combinations. This additional flexibility can enable distributors to greater reduce valve inventory levels, whilst retaining the same number of capabilities. Parker also has unrivalled experience in developing customised product solutions complying with the highest technical, environmental, energy and service life requirements.



PARKER FCDE - GENEVA - SWITZERLAND



PARKER FCDE - MILAN - ITALY

# Table of Content

- Introduction and Markets .....04
- Applications and Benefits .....05
- 2/2 Normally Closed Solenoid Valves .....06
- 2/2 Normally Open Solenoid Valves .....07
- 3/2 Universal Solenoid Valves.....08
- Coils and Accessories.....09
- How to Order a Complete Solenoid Valve.....10
- Other Parker Products for Sterilizers .....11
- Parker’s Motion & Control Technologies.....15
- Parker Worldwide.....16



**WARNING - USER RESPONSIBILITY**  
**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

# Introduction

Parker Hannifin, the global leader in motion and control technologies, is your ideal partner offering a wide range of solutions for Sterilization.

A wide product offering with high quality standards is available, including Solenoid Valves, Pipes, Fittings and Filters.

Each product has been developed by our engineers taking care of answering with exclusive benefits to the functional needs.



## Sterilisation Market

- Table top Medical sterilizers
- Dental sterilizers
- Medium capacity autoclaves (vessel up to 60l)
- B class sterilizers



# Applications and Benefits

## Applications

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Sterilisation in dental, medical and veterinary studies is a key process to ensure the cleanliness of the tools which will be used by the doctor with the patient.

This process is regulated by precise norms, including EN13060.

Sterilisation process is made by specific equipment controlling water, demineralized water, air, steam and vacuum in order to ensure the right cleaning conditions of the tools.

Parker, the global leader in motion and control technologies, can provide you with a wide range of components for sterilizers, each of them with exclusive benefit.



## Benefits

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Our engineers have developed a wide product offering for the sterilizer market taking into consideration of the most critical aspects of the application, like steam resistance, vacuum resistance, life targets, application temperature.

### **All the products listed in this catalogue have been developed to ensure:**

- Strong and reliable design given by proper selection of the materials and oversizing of the areas under mechanical stress,
- Right materials to ensure long life in contact with selected media,
- Vacuum resistant solutions,
- Wide range of configurations.
- Products are IMQ,RoHS,CE approved and possibly UL,VDE,NSF depending on reference.

# Solenoid Valves Program

## 2/2 Normally Closed Solenoid Valves



Parker product portfolio includes 1/4" port size valves with different flow rates. The smooth design ensures good performances, optimization of flow rate, and excellent vacuum resistance during life.

A wide range of high temperature resistant H class coils with several voltages are available. FKM is the selected sealing compound giving the best performances when additives and cleaners are present in the circuit.

### Typical application:

- **Filling:** Water loading of the steam generator and pump shut off line
- **Filling:** Steam loading of the sterilization vessel and vacuum holding
- **Emptying:** Exhaust of the sterilization vessel

**Fluids:** Superheated water, Steam, cold water, air, vacuum

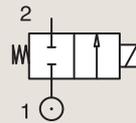
**Nozzle:** Stainless steel

**Valve Body:** Moulded brass, CW617N UNI EN 12165:98

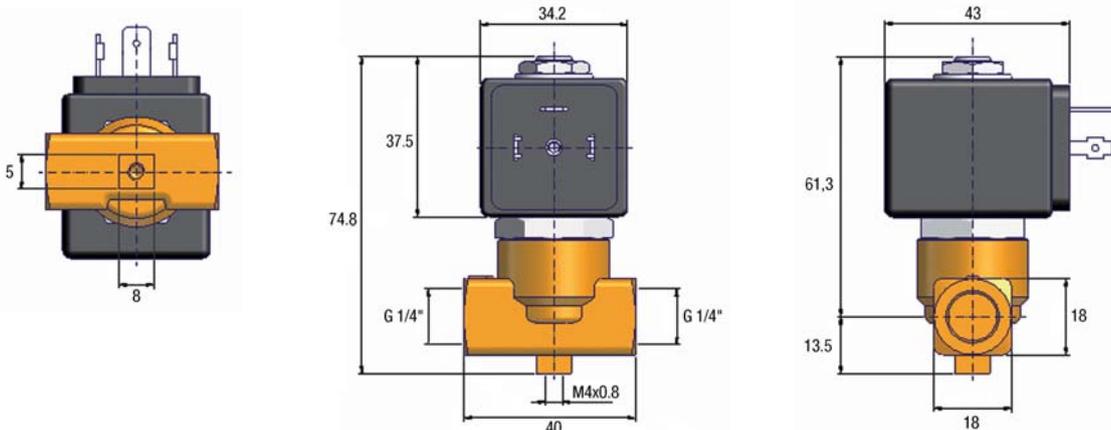
**Sleeve and plungers:** Stainless Steel

**Seals:** FKM

BRASS PIPE MOUNTING NORMALLY CLOSED																
Port Size	Orifice Ø	Flow Factors		Admissible Differential Pressure Bar			Fluid Temp.		Seat Seal	Valve Order Number	Valve Type	Coil Type	Power (cold)		Dwg. No.	
		KV m <sup>3</sup> /h	KV l/min	Min	Max (MOPD)	Vacuum*	Min	Max					AC W	DC W		
BSP	mm			bar	AC bar	DC bar	mbar	°C	°C							
1/4"	2.5	0.17	2.83	0	20	-	950	-10	140	FKM	395448	126CV	ZH14 24/50-60	14	-	1
	2.5	0.17	2.83	0	20	-	950	-10	140	FKM	395450	126CV	ZH14 220-230/50-60	14	-	1
	2.5	0.17	2.83	0	20	-	950	-10	140	FKM	398264	126CV	ZH14 110-120/50-60	14	-	1
	2.5	0.17	2.83	0	-	15	950	-10	140	FKM	398265	126CV	ZH16 24DC	-	16	1
	3.5	0.33	5.50	0	15	-	950	-10	140	FKM	395452	126LV	ZH14 24/50-60	14	-	1
	3.5	0.33	5.50	0	15	-	950	-10	140	FKM	395454	126LV	ZH14 220-230/50-60	14	-	1
	3.5	0.33	5.50	0	15	-	950	-10	140	FKM	398266	126LV	ZH14 110-120/50-60	14	-	1
	3.5	0.33	5.50	0	-	10	950	-10	140	FKM	398267	126LV	ZH16 24DC	-	16	1
	4.0	0.40	6.66	0	10	-	950	-10	140	FKM	398268	126JV.5	ZH14 24/50-60	14	-	1
	4.0	0.40	6.66	0	10	-	950	-10	140	FKM	397156	126JV.5	ZH14 220-230/50-60	14	-	1
	4.0	0.40	6.66	0	10	-	950	-10	140	FKM	398269	126JV.5	ZH14 110-120/50-60	14	-	1
	4.0	0.40	6.66	0	-	6	950	-10	140	FKM	397154	126JV.5	ZH16 24DC	-	16	1
	4.5	0.55	9.16	0	8	-	950	-10	140	FKM	395456	126KV	ZH14 24/50-60	14	-	1
	4.5	0.55	9.16	0	8	-	950	-10	140	FKM	395458	126KV	ZH14 220-230/50-60	14	-	1
	4.5	0.55	9.16	0	8	-	950	-10	140	FKM	398270	126KV	ZH14 110-120/50-60	14	-	1
	4.5	0.55	9.16	0	-	3	950	-10	140	FKM	398271	126KV	ZH16 24DC	-	16	1



\*Vacuum – working pressure given must be considered with vacuum applied at the outlet side of the valve (2) and no pressure applied simultaneously at the inlet side. We recommend to apply vacuum at the outlet side only.



All dimensions are in mm

Dimensional Drawing N° 1

# Solenoid Valves Program

## 2/2 Normally Open Solenoid Valves



Parker product portfolio includes 1/4" port size normally open valves to balance internal vs external pressure and hold pressure during the sterilisation cycle.

The smooth design ensures good performances, optimization of flow rate, and excellent vacuum resistance during life, efficient speed when valve is working to release pressure during sterilization cycle, in order to keep the temperature constant inside sterilizer vessel.

FKM is the selected compound giving the best performances when additives and cleaners are present in the circuit.

**Fluids:** Steam, air, vacuum

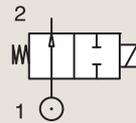
**Nozzle:** Stainless steel

**Valve Body:** Moulded brass, CW617N UNI EN 12165:98

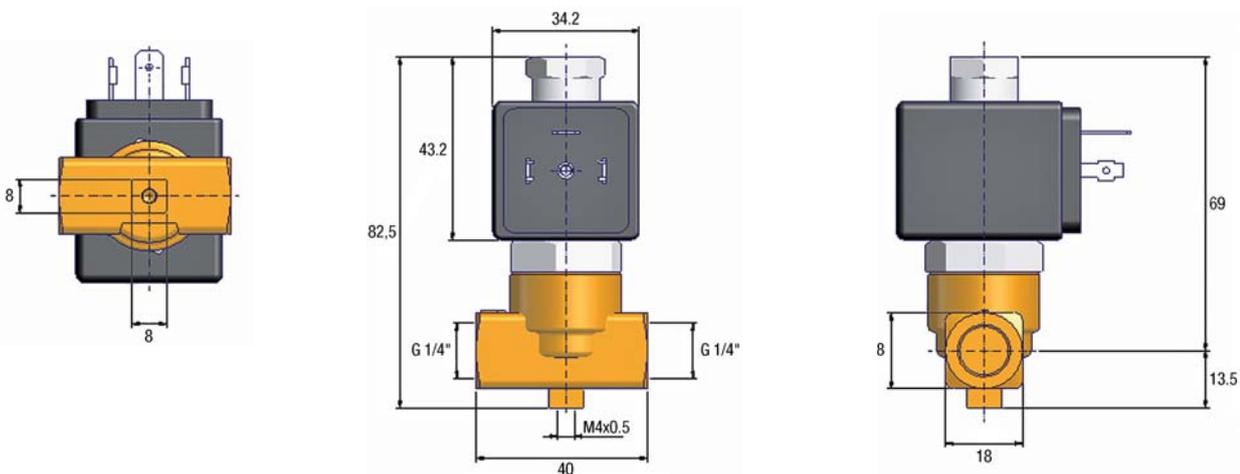
**Sleeve and plungers:** Stainless Steel

**Seals:** FKM

BRASS PIPE MOUNTING NORMALLY OPEN																
Port Size	Orifice Ø	Flow Factors		Admissible Differential Pressure Bar			Vacuum*	Fluid Temp.		Seat Seal	Valve Order Number	Valve Type	Coil Type	Power (cold)		Dwg. No.
		KV m³/h	KV l/min	Min	Max (MOPD)	DC		Min	Max					AC W	DC W	
BSP	mm			bar	AC bar	DC bar	mbar	°C	°C							
1/4"	2.5	0.18	3	0	7	-	950	-10	140	FKM	398257	136.2FV	ZH14 24/50-60	14	-	2
	2.5	0.18	3	0	7	-	950	-10	140	FKM	397177	136.2FV	ZH14 220-230/50-60	14	-	2
	2.5	0.18	3	0	7	-	950	-10	140	FKM	398258	136.2FV	ZH14 110-120/50-60	14	-	2
	2.5	0.18	3	0	-	7	950	-10	140	FKM	398259	136.2FV	ZH16 24DC	-	16	2
	3.0	0.24	4	0	5.5	-	950	-10	140	FKM	398260	136.2YV	ZH14 24/50-60	14	-	2
	3.0	0.24	4	0	5.5	-	950	-10	140	FKM	398261	136.2YV	ZH14 220-230/50-60	14	-	2
	3.0	0.24	4	0	5.5	-	950	-10	140	FKM	398262	136.2YV	ZH14 110-120/50-60	14	-	2
	3.0	0.24	4	0	-	5.5	950	-10	140	FKM	398263	136.2YV	ZH16 24DC	-	16	2



\*Vacuum – working pressure given must be considered with vacuum applied at the outlet side of the valve (2) and no pressure applied simultaneously at the inlet side. We recommend to apply vacuum at the outlet side only.



All dimensions are in mm

Dimensional Drawing N° 2

# Solenoid Valves Program

## 3/2 Universal Solenoid Valves



139.2YV and 139.2LV.1 are the right products to ensure the diverting/mixing function before the vacuum pump. The 3.0 bar hold pressure ensures the valve to stay closed when sterilization cycle is running. The smooth design ensures good performances, optimization of flow rate, and excellent vacuum resistance during life.

A wide range of electrical part includes several voltage and high temperature resistant H class coils.

FKM is the selected sealing compound giving the best performances when additives and cleaners are present in the circuit.

**Fluids:** Superheated water, Steam, cold water, air, vacuum

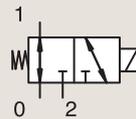
**Seals:** FKM

**Valve Body:** Moulded brass, CW617N UNI EN 12165:98

**Nozzle:** Stainless steel

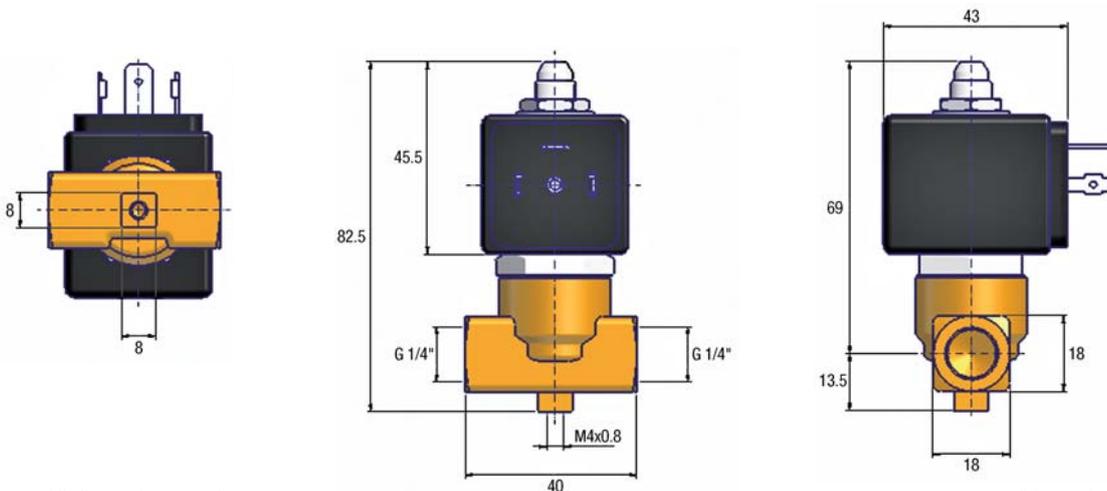
### BRASS PIPE MOUNTING

#### UNIVERSAL



Port Size	Orifice Ø	Flow Factors		Admissible Differential Pressure Bar			Vacuum*	Fluid Temp.		Seat Seal	Valve Order Number	Valve Type	Coil Type	Power (cold)		Dwg. No.
		KV m³/h	KV l/min	Min bar	Max (MOPD) AC bar	DC bar		Min °C	Max °C					AC W	DC W	
1/4"	3.0	0.18	3	0	3	-	950	-10	140	FKM	398250	139.2YV	ZH14 24/50-60	14	-	3
	3.0	0.18	3	0	3	-	950	-10	140	FKM	398251	139.2YV	ZH14 220-230/50-60	14	-	3
	3.0	0.18	3	0	3	-	950	-10	140	FKM	398252	139.2YV	ZH14 110-120/50-60	14	-	3
	3.0	0.18	3	0	-	3	950	-10	140	FKM	398253	139.2YV	ZH16 24DC	-	16	3
	3.5	0.18	3	0	1	-	950	-10	140	FKM	398254	139.2LV.1	ZH14 24/50-60	14	-	3
	3.5	0.18	3	0	1	-	950	-10	140	FKM	397179	139.2LV.1	ZH14 220-230/50-60	14	-	3
	3.5	0.18	3	0	1	-	950	-10	140	FKM	398255	139.2LV.1	ZH14 110-120/50-60	14	-	3
	3.5	0.18	3	0	-	1	950	-10	140	FKM	398256	139.2LV.1	ZH16 24DC	-	16	3

\*Vacuum – working pressure given must be considered with vacuum applied at the outlet side of the valve (2) and no pressure applied simultaneously at the inlet side. We recommend to apply vacuum at the outlet side only.



All dimensions are in mm

Dimensional Drawing N° 3

# Coils and Accessories



## ZH Series - Standard Coil Bi-Frequency H Class, IP65

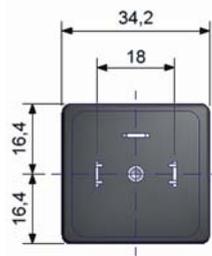
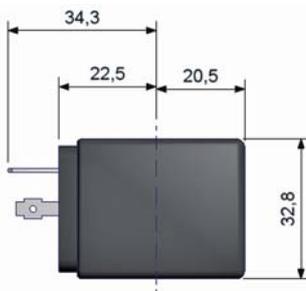


These coils can be mounted with every Parker solenoid valves corresponding to the specified Coil Group. Coil manufactured with H Class copper wire, moulded in thermoplastic material polyester with 30% glass fiber.

IP65 protection rate with EN 175301-803:2006-A. Three pin connector. This coil conforms to the IEC/ CENELEC safety standards and complies with European low-voltage directive. DIN plug connector to be ordered separately (see coil accessories section).

Specification		High Temperature + High Power			
Ref. (without DIN plug)		ZH14/ZH16			
Coil Group		20.2			
Degree of protection		IP65 according to IEC / EN 60529 standards (with DIN plug and gasket)			
Class of insulation		H 180°C			
Electrical connection		The coil is connected with a 2 P + E plug according to EN 175301-803 - A			
Ambient temperature		ZH14/ZH16 -10°C to +80°C - The application is limited also by the temperature range of the valve.			
Elect. Power	DC	P (cold) 20°C	16 W		
	AC	P (cold) 20°C	14 W		
		Attraction cold	33 VA		
Weight		130 g (without plug)			
Voltages "Un"		VAC/Hz	Order Number	VDC	Order Number
-10% to +10% of Un for AC - 5 % to + 10 % for Un DC		ZH14 24/50-60 ZH14 115/50-60 ZH14 230/50-60 ZH14 100/50-60 ZH14 200/50-60	304100 304102 304104 304121 304108	ZH16 24DC ZH16 12DC	304112 304110

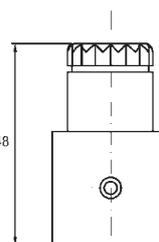
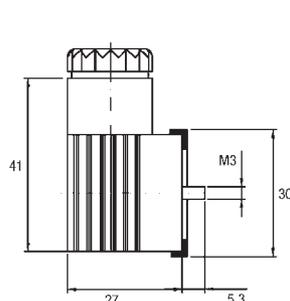
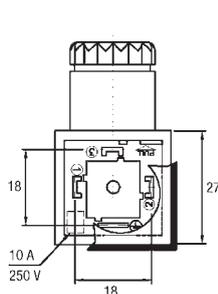
**To Order a Coil:** Use 6 digits ordering number - **Code Example:** ZH16 for 24VDC = 304112  
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.



## ACCESSORIES: ELECTRICAL CONNECTORS

- 2 P + E DIN 43650A Plug

Max A	Cable Section	Nominal Voltage	Reference	Dimensional Drawing
16 A	6-10 mm <sup>2</sup>	250/300 V	600003PLUG	5



All dimensions are in mm

Dimensional Drawing N° 5

# How to Order a Complete Solenoid Valve

A complete solenoid valve is composed by 2 elements: the **valve** and the **coil**.

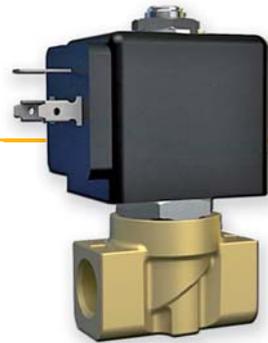
All the parts listed in this catalogue are supplied with the standard housing assembled.

Therefore your selection process is easier: you have to choose the valve with corresponding coil at a given voltage from page 6 to 8 and use the 6 digit number to order the complete solenoid valve.

## Step 1

Select the pressure vessel reference needed on pages 6-8.

Standard Pressure	Fluid Temp.		Seat Seal	Valve Order Number	Valve Type	Coil Type	Power (coil)
	Vacuum*	Min					
mbar	°C	°C					AC W
950	-10	140	FKM	<b>395448</b>	126CV	ZH14 24/50-60	18
950	-10	140	FKM	395450	126CV	ZH14 220-230/50-60	18
950	-10	140	FKM	398264	126CV	ZH14 110-120/50-60	18
950	-10	140	FKM	398265	126CV	ZH16 24DC	18
950	-10	140	FKM	395452	126LV	ZH14 24/50-60	18
950	-10	140	FKM	395454	126LV	ZH14 220-230/50-60	18
950	-10	140	FKM	398266	126LV	ZH14 110-120/50-60	18



## Step 2

Select accessories at page 9 (optional)



### Ordering a product or a configuration not listed in the catalogue.

When an application demands a combination of features not listed in the catalogue, please feel free to contact the closest Parker office.

Parker personnel will assist in determining the applicability, availability and price of the new product.

# Other Parker Products for Sterilizers

## Quick Connect Couplings

### BT Series - Nominal Diameter: 7 mm

#### Technical Description:

The BT series coupling system has been developed for use in medical, biotechnology, pharmaceutical and laboratory applications and uses only medical grade materials. The main components are molded in a clean room from virgin transparent USP Class VI polysulfone (PSU). The seals are made from platinum cured silicone. The locking pins are stainless steel. Only available as straight-through version.



#### Advantages:

Single handed operation. Audible click to indicate a secure connection. Transparent components allow visual control of the flow path. Completely smooth flow path without any dead spaces prevents cross-contamination. Ergonomic sleeve for easy operation with gloves.

#### Working Pressure:

- **PB** = 0 bar up to 4.5 bar
- **Maximum Static Working Pressure** with safety factor of 4 to 1

#### Working Temperature:

- -20°C up to +148°C

# Other Parker Products for Sterilizers

## Quick Connect Couplings

**Series 20 - Nominal Diameter: 2.7 = 6 mm<sup>2</sup>**

**Series 21 - Nominal Diameter: 5 = 20 mm<sup>2</sup>**

### Technical Description:

Mini industrial coupling, internationally used profile.  
Notable for a high flow and numerous application options with various media.  
Frequent use in minipneumatics, medical technology and chemistry/pharmacy.

### Advantages:

Single handed operation. Small dimensions.

### Working Pressure:

- **PB** = 35 bar
- **Maximum Static Working Pressure**  
with safety factor of 4 to 1

### Working Temperature\* :

- -15°C up to +200°C (FKM)  
depending on the medium.

\* At a temperature below -15°C and above +200°C special seals are available on request.

For more information on Quick Connect Couplings, please contact:

### Parker Hannifin Manufacturing Germany GmbH & Co. KG

Quick Coupling Division Europe - Daimlerstraße 7 - 71735 EBERDINGEN - Germany

Phone: +49 7042 100 0 - Fax: +49 7042 100 147 - info.rectus@parker.com - www.rectus.de



## Instant Fitting

### LIQUIfit™

Leak-free instant fittings in a 100% bio-based compact body. LIQUIfit™ offers optimum performance suitable for contact with water, beverages and food, as well as being the most compact profile on the market. The many advantages of this range include EPDM patented sealing technology, full flow, no pumping effect and minimized internal retention.

### Technical Specifications

#### Working Pressure:

from -0.9 to 16 bar  
(depending on the product type)

#### Working Temperature:

-10°C to +95°C  
(depending on the product type)

### Material Specifications

**Body and threads:** bio-based material

**Gripping ring:** stainless steel

**Thread sealant:** PTFE

**'D' ring:** EPDM



Ø4 - Ø12 mm  
Ø5/32 - Ø1/2 inch



NSF 61  
- C-HOT -

For more information see catalogue CAT/0598.

# Instant Fittings

## LF 3600 Nickel-Plated Brass

The LF 3600 fittings range, a range of extremely robust fittings. Resisting temperatures of up to 150°C, and functioning at 99% vacuum at as high as 30 bar, the LF 3600 is the one and only brass instant fitting on the market capable of such a performance.

### Technical Specifications

**Working Pressure:**

from 0.9 to 30 bar  
(limited to 20 bar for compact swivel elbows 3699, 3609)

**Working Temperature:**

-20°C to +150°C

### Material Specifications

**Body/Collet/Washer/Sub-base:**

high phosphorus chemical nickel-plated brass

**'O' ring:** FKM fluoroelastomer

NSF H1 grease



For more information see catalogue BUL/0525.

## LF 3900/LF 3800

LF 3900: a range of instant fittings in full 316L stainless steel, with FKM seals, for optimum resistance to aggressive environments. LF 3800: a range of instant fittings in 316L stainless steel with 303 (collet) and FKM seals, for elemental chemical resistance and competitive price positioning.

### Technical Specifications

**Working Pressure:**

from 0.9 to 30 bar  
(maxi 20 bar for 3979/3879 and 3989/3889)

**Working Temperature:**

-20°C to +150°C

### Material Specifications

**Body/Collet/Washer:**

stainless steel 316L (LF 3900)

stainless steel 303 (LF 3800)

**Sub-base:** stainless steel 316L**'O' ring:** FKM

For more information see catalogue CAT/0598.

## Universal Compression Fittings

Universal compression fittings are designed to solve all fluid distribution problems and provide a complete system of fittings suited to all types of tubing (copper and stainless steel) and valve assemblies thanks to the flexibility offered by the vast range of accessories: olives, sleeve nuts, reducers, tube adaptors.

### Technical Specifications

**Working Pressure:** up to 150 bar  
(depending on the product type)

**Working Temperature:** up to 150°C  
(depending on the product type)

### Material Specifications

**Body/Olive\*:** brass or stainless steel

\*Available in lead-free brass (<0.2%) upon request



For more information see catalogue CAT/0524.

# Other Parker Products for Sterilizers

## Tubing

### Advanced PE

Made from high-grade polyethylene, "Advanced PE" tubing ensures the best balance between flexibility and pressure/temperature resistance. Resistant to a wide range of aggressive chemical agents. Complies with international regulations and certifications for food and drinking water and standard W270 regarding micro-organism growth on materials. Available in nine colours and eight diameters.



#### Technical Specifications

##### Working Pressure:

from -0.9 to 16 bar (depending on temperature and product type)

##### Working Temperature:

-15°C to +95°C



NSF 51



NSF 42/58

This tubing is tested and certified by NSF International against NSF/ANSI Standard 42/58 for materials and structural integrity requirements\*



Certified NSF/ANSI 61 - C HOT -



for inch tubing

For more information see catalogue CAT/0598.

### FEP

Parker Legris fluoropolymer tube (FEP) is food quality and provides excellent resistance to aggressive and corrosive agents and to high temperatures. It has a surface hardness of 55° shore D.



#### Technical Specifications

##### Working Pressure:

from -0.9 to 22 bar (depending on temperature and product type)

##### Working Temperature:

-40°C to +150°C



1935/2004/EC DI 2002/95/EC

For more information see catalogue CAT/0524.

### PFA

#### A Comprehensive Range of PFA Tubing for Perfect Adaptability

High purity grade PFA for our clear tubing to cover all applications. Standard grade PFA for our coloured tubing for circuit identification and special requests.

#### Extreme Versatility for All Technical Applications

A flexible alternative to stainless steel tubing. Broad range of working temperatures. Non-stick properties, chemically inert and lowest permeability for the conveyance of numerous fluids and gases. Outstanding resistance to ageing. Non-flammable and UV-transparent. Repeated flexing possible with unmoved resistance to stress cracking.



#### Technical Specifications

##### Working Pressure:

from -0.9 to 35 bar (depending on temperature and product type)

##### Working Temperature:

-196°C to +260°C



USP class VI (high purity PFA)

For more information see catalogue LEAF/0598.

For more information on Instant Fittings and Tubing, please contact:

Fluid System Connectors Europe

**Parker Hannifin France SAS**  
**Parker Hannifin Corporation**

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# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## Aerospace Key Markets

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

## Key Products

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & atomization devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## Climate Control Key Markets

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

## Key Products

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Hand shut-off valves  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## Electromechanical Key Markets

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

## Key Products

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## Filtration Key Markets

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

## Key Products

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & system



## Fluid & Gas Handling

### Key Markets

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### Key Products

Check valves  
Connectors for low pressure fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## Hydraulics

### Key Markets

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### Key Products

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## Pneumatics

### Key Markets

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### Key Products

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## Process Control

### Key Markets

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### Key Products

Analytical Instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/ controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## Sealing & Shielding

### Key Markets

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### Key Products

Dynamic seals  
Elastomeric o-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic retained composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration dampening

ENGINEERING YOUR SUCCESS.

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### US Product Information Centre

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